No 1

title. 연습문제 1 2 date.

1-(b) $\lim_{n\to\infty} a_n = \lim_{n\to\infty} \frac{n+1}{3n-1}$

$= \lim_{n\to\infty} \frac{1+\frac{1}{n}}{3-\frac{1}{n}} = \frac{1}{3}$ ∴ 수렴한다

1-(d) $\lim_{n\to\infty} a_n = \lim_{n\to\infty} \left(\sqrt{n+2} - \sqrt{n}\right)$

$= \lim_{n\to\infty} \frac{(\sqrt{n+2}-\sqrt{n})(\sqrt{n+2}+\sqrt{n})}{\sqrt{n+2}+\sqrt{n}}$

$= \lim_{n\to\infty} \frac{2}{\sqrt{n+2}+\sqrt{n}} = 0$ ∴ 수렴

1-(d) $\lim_{n\to\infty} a_n = \lim_{n\to\infty} \frac{\sqrt{n}}{\sqrt{n}+1}$

$= \lim_{n\to\infty} \frac{\sqrt{n}/\sqrt{n}}{1+\frac{1}{\sqrt{n}}} = 1$ ∴ 수렴

1-(e) $\lim_{n\to\infty} \left(1+\frac{2}{n}\right)^n = \lim_{n\to\infty} \left\langle \left(1+\frac{2}{n}\right)^{\frac{n}{2}} \right\rangle^2 \quad \left(m = \frac{n}{2}\right)$

$= \lim_{m\to\infty} \left\langle \left(1+\frac{1}{m}\right)^m \right\rangle^2$

$= e^2$ ∴ 수렴.